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### REMARKS

This is a response to the Official Action dated April 1, 2005. Applicants wish to thank the Examiner and her supervisor for the courtesies extended during the telephone interview conducted today. Reconsideration of the above-identified application in view of the preceding amendments and the following remarks is respectfully requested.

Claims 1, 12, 13 and 22 have been further amended and claims 1-17 and 20-22 remain pending in this application. No new matter is believed to have been added to the subject application by way of this amendment, nor have any new issues been raised.

### Claim Rejections -- 35 U.S.C. §103

In the Official Action, the Examiner rejected Claims 1-4, 6, 7, 9, 10, 12-14, 16, 17, and 20-22 under 35 U.S.C. 103(a) as being unpatentable over Miller et al (U.S. Patent No. 5,275,743) in view of Pall (U.S. Patent No. 4,033,881) and stated as follows:

4. As to claim 1, Miller ('743) teaches a filter element (10), comprising a filtration media (22), an upstream filtration media support (21) positioned upstream from and in contact with said filtration media (22) and a multi-layer downstream filtration media support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein: said first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream media support (23,24). Miller further teaches a polymeric mesh material of manufacture for the second downstream layer and more specifically states a suitable polymeric mesh, such as, Naltex and Zicot. Both of these meshes/nettings are known in the art as an extruded

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mesh/net. See the Delstar website at [www.delstarinc.com](http://www.delstarinc.com) for information regarding Naltex and US Patent 5,725,784 column 7 lines 6-8 to Geibel et al regarding Zicot. Miller is silent to the extruded polymeric mesh having ribs. However, Pall ('881) teaches a pleated filter cartridge with upstream and downstream support members fabricated from extruded netting with ribs in column 3 lines 63-66 and column 4 lines 12-14. It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's. (Emphasis added)

5. As to claim 2, Miller ('743) discloses a filter element wherein the filtration media is a pleated filtration media having a plurality of longitudinally extending pleats in column 8 lines 66-68, which meet's applicant's claim.

6. As to claim 3, Miller ('743) teaches the use of a pleated filtration media (column 2 lines 32-36) selected from the group consisting of radial pleats, w-pleats and spiral pleats (column 5 lines 28-31), which meet's applicant's claim.

7. As to claim 4, Miller ('743) describes a filter element in column 2 lines 58-64, wherein the filtration media is a microporous filtration membrane having a pore size of 10 microns or less, which meet's applicant's claim.

8. As to claim 6, Miller ('743) describes, column 3 lines 58-63, the multi-layer downstream support consisting of said first downstream support layer and said second downstream support layer, which meet's applicant's claim.

9. As to claim 7, Miller ('743) also describes the first downstream support layer is fabricated from a nonwoven material in column 3 lines 61-63, which meet's applicant's claim.

10. As to claim 9, Miller ('743) teaches said nonwoven material is fabricated as a wetlaid material in column 2 line 17, which meet's applicant's claim.

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11. As to claim 10, Miller ('743) also states said nonwoven material is fabricated from polyester in column 4 line 24, which meet's applicant's claim.

12. As to claim 12, Miller ('743) teaches a filter element (10), comprising a filtration media (22), an upstream pleat support (21) positioned upstream from and in contact with said filtration media (22) and a multi-layer downstream pleat support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein said first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24). The first downstream support layer (23) is fabricated so as to minimize points of surface contact with said filtration media (22); and said second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream pleat support (23,24). Miller further teaches a polymeric mesh material of manufacture for the second downstream layer and more specifically states a suitable polymeric mesh, such as, Naltex and Zicot. Both of these meshes/nettings are known in the art as an extruded mesh/net. See the Delstar website at [www.deistarinc.com](http://www.deistarinc.com) for information regarding Naltex and US Patent 5,725,784 column 7 lines 6-8 to Geibel et al regarding Zicot. Miller is silent to the extruded polymeric mesh having ribs. However, Pall ('881) teaches a pleated filter cartridge with upstream and downstream support members fabricated from extruded netting with ribs in column 3 lines 63-66 and column 4 lines 12-14. It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's. (Emphasis added)

13. As to claim 13, Miller ('743) also teaches a filter cartridge comprising a filter element (10) having a longitudinal axis, an outer periphery and an inner periphery, and including a filtration media (22), an upstream filter media support (21) positioned upstream from and in

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contact with said filtration media (22); and a multi-layer downstream support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein the first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24), said first downstream support layer (23) being fabricated so as to minimize points of surface contact with said filtration media (22). The second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream filter media support (23,24); a perforated cage (11) surrounding the outer periphery of the filter element; a perforated core (12) surrounded by the inner periphery of the filter element; and end caps (13,14) enclosing both ends of the perforated cage (11). Miller further teaches a polymeric mesh material of manufacture for the second downstream layer and more specifically states a suitable polymeric mesh, such as, Naltex and Zicot. Both of these meshes/nettings are known in the art as an extruded mesh/net. See the Delstar website at [www.deistarinc.com](http://www.deistarinc.com) for information regarding Naltex and US Patent 5,725,784 column 7 lines 6-8 to Geibel et al regarding Zicot. Miller is silent to the extruded polymeric mesh having ribs. However, Pall ('881) teaches a pleated filter cartridge with upstream and downstream support members fabricated from extruded netting with ribs in column 3 lines 63-66 and column 4 lines 12-14. It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's. (Emphasis added)

14. As to claim 14, Miller ('743) also describes the first downstream support layer is fabricated from a nonwoven material in column 3 lines 61-63, which meet's applicant's claim.

15. As to claim 16, Miller ('743) states said nonwoven material is fabricated as a wetlaid material in column 2 line 17, which meet's applicant's claim.

16. As to claim 17, Miller ('743) also states said nonwoven material is

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fabricated from polyester in column 4 line 24, which meet's applicant's claim.

17. As to claim 20, Miller (743) discloses in Figure 1 a perforated cage (11) is equipped with end caps (13,14) at both ends thereof, which meet's applicant's claim.

18. As to claim 21, Miller (743) discloses in Figure 1 said perforated core (12) is a cylindrical core and is coaxially positioned within the filter element, which is a cylindrical filter element, and the cage (11) is likewise cylindrical and is coaxially positioned about the cylindrical filter element, which meet's applicant's claim.

19. As to claim 22, Miller (743) also teaches a filter cartridge comprising a filter element (10) having a longitudinal axis, an outer periphery and an inner periphery, and including a filtration media (22), an upstream filter pleat support (21) positioned upstream from and in contact with said filtration media (22); and a multi-layer downstream support (23,24) positioned downstream from said filtration media (22), said multi-layer downstream support (23,24) including a first downstream support layer (23) and a second downstream support layer (24), wherein the first downstream support layer (23) is in contact with said filtration media (22) and is interposed between said filtration media (22) and said second downstream layer (24), said first downstream support layer (23) being fabricated so as to minimize points of surface contact with said filtration media (22). The second downstream support layer (24) is in contact with said first downstream support layer (23) and is fabricated so as to facilitate lateral fluid flow relative to said multi-layer downstream filter pleat support (23,24); a perforated cage (11) surrounding the outer periphery of the filter element; a perforated core (12) surrounded by the inner periphery of the filter element; and end caps (13,14) enclosing both ends of the perforated cage (11). Miller further teaches a polymeric mesh material of manufacture for the second downstream layer and more specifically states a suitable polymeric mesh, such as, Naltex and Zicot. Both of these meshes/nettings are known in the art as an extruded mesh/net. See the Delstar website at [www.deistarinc.com](http://www.deistarinc.com) for information regarding Naltex and US Patent 5,725,784 column 7 lines 6-8 to Geibel et al regarding Zicot. Miller is silent to the extruded polymeric mesh having ribs. However, Pall ('881) teaches a pleated filter cartridge with upstream and downstream support members fabricated from extruded

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netting with ribs in column 3 lines 63-66 and column 4 lines 12-14. It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's. (Emphasis added)

20. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (U.S. Patent No. 5,275,743) in view of Bayerlein et al. (U.S. Patent No. 6, 153,098), as stated in the paper mailed 3 November 2004.

21. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (U.S. Patent No. 5,275,743), as stated in the paper mailed 3 November 2004.

22. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (U.S. Patent No. 5,275,743) in view of Pall (U.S. Patent No. 4,033,881), as stated in the paper mailed 3 November 2004.

Applicants wish to thank the Examiner and her supervisor for the useful discussions held earlier today. In an effort to clarify the distinguishing features of the independent claims of the present application, applicants will like to provide the information contained in the earlier response for both Examiner's consideration. It is believed that the following clearly distinguishes the claims of the present application from the any disclosure, suggestion or teaching contained in the applied references.

As discussed earlier, applicants believe that apertured films are fundamentally distinct from extruded mesh materials in both their design and the processes used to manufacture them. Apertured films typically contain primary strands or ribs that run in the down web machine direction while the extruded meshes contain primary ribs or strands that only run diagonal to the down web machine direction. Apertured films are manufactured using a process similar to that used to produce biaxial oriented films while extruded mesh is manufactured using a counter-rotating die technology that places the strands in two different planes.

A further distinction between the apertured film and the extruded mesh is the greater ability of the apertured film to "nest" when folded. When a

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material containing a 3-dimensional structure is folded onto itself, and when measured produces a thickness less than the sum of the 2 layers measured independently, then a "nesting" condition of the strands or ribs is taking place. The apertured film exhibits the greatest ability for the strands or ribs to "nest" due to the primary strand or rib formation running in the machine direction. This rib nesting capability allows for the maximum surface area in the filter's design. In contrast, the extruded mesh possesses a diagonal strand relative to the machine direction that, when folded in the machine direction, provides only limited "nesting" capability of the ribs.

To support the above discussion, material samples were measured for single layer thickness and folded thickness (ribs facing ribs) using a vernier caliper. Calculated % nesting was determined by the equation:

$$\% \text{ Nesting} = (2 \times \text{Single Layer Thickness} - \text{Folded Thickness}) / 2 \times \text{Single Layer Thickness}.$$

	Type	Measured Single Layer Thickness (in)	Calculated 2x Thickness (in)	Measured Folded Thickness (in)	Calculated % Nesting
Delnet RC0707-24P	Apertured Film	0.006	0.012	0.007	42%
Delnet RB0707-31P	Apertured Film	0.005	0.010	0.006	40%
Nalle N01716-90PP	Extruded Netting	0.018	0.036	0.030	17%
Nalle N01014-60PP	Extruded Netting	0.011	0.022	0.020	9%
Tygar 3091L	Spunbond	0.005	0.010	0.010	0%
PTFE Membrane	Membrane	0.002	0.004	0.004	0%

Examples of the nesting capabilities of the various materials measured are shown in the table above. As can be seen, apertured film material achieves over double the percent nesting as compared to the extruded mesh material.

The European primary reference discloses that an "*Extruded polymeric mesh is generally preferable to other support and drainage materials, including woven and non-woven fibrous webs and polymeric netting, because it is so smooth...*" (See page 3, lines 39 – 40). However, claim 1 of the present application specifies "*extruded apertured film having ribs*". Benefits of the apertured film are related to the importance of 'beads', 'strands', or 'ribs' nesting to maximise the filter

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area and thus optimise flow performance. The strands of the **apertured film**, when folded upon one and other, will buckle and "misalign" (i.e. not be exactly opposed) creating the **optimum nesting condition**. The nested ribs which are now in a "side-by-side" fully nested configuration provide an efficient fluid pathway.

In contrast, in both the European and the U. S. primary references, careful strand or bead alignment is required: "*Care should be taken in the alignment of the support and drainage layer within the corrugator to ensure that the beads oppose themselves...*" [European primary reference, European Patent Application No. 0 470 485 A2, (based upon U. S. Patent No. 5,552,048"), at page 5, lines 35 to 37)].

The use of an extruded mesh in either primary reference does not give the performance benefits as described in the present claims. The extruded mesh (European and U. S. primary references) and apertured film (present claims) have equivalent flux capacities; however the material thickness and "nesting capabilities of the two materials are not equivalent". The following tables demonstrate the fundamental problem with the extruded mesh material in that the amount of filter media is limited due to increased material thickness properties and decreased nesting capabilities, when used in a high area filter design, as disclosed in the present application.

The following table presents the calculated effects of varying the thickness and nesting properties of the apertured film versus the extruded mesh on the individual pleat thickness of a typical cartridge construction. The pleat thickness without nesting effects can be determined by summing the thickness of the individual layers of material and multiplying by 2 to arrive at the individual folded pleat thickness (see the table, sixth column " $2 \times \text{Sum of Material Thickness}$ "). The pleat thickness with nesting effects can be determined by first multiplying the downstream drainage layer thickness by the appropriate nesting % and then summing the thickness of the individual layers of material and multiplying by 2 to arrive at the individual folded pleat thickness (see the table, eighth column "*Individual Pleat Thickness*").

The following table presents the calculated effects of varying the thickness and nesting properties of the apertured film vs. the extruded mesh on the individual pleat thickness of a typical cartridge construction. The pleat thickness



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without nesting effects can be determined by summing the thickness of the individual layers of material and multiplying by 2 to arrive at the individual folded pleat thickness (reference column "2x Sum of Material Thickness"). The pleat thickness with nesting effects can be determined by first multiplying the downstream drainage layer thickness by the appropriate nesting % and then summing the thickness of the individual layers of material and multiplying by 2 to arrive at the individual folded pleat thickness (reference column "Individual Pleat Thickness").

Filter Media Pleat Design	Upstream Support Thickness (in)	Membrane Thickness (in)	Downstream Support Thickness (in)	Downstream Drainage Thickness (in)	2x Sum of Material Thickness (in)	% Nesting of Downstream Drainage	Individual Pleat Thickness
A	0.004	0.002	0.004	0.005	0.030	40%	0.026
B	0.004	0.002	0.004	0.018	0.056	17%	0.050
C	0.004	0.002	0.004	0.010	0.040	9%	0.038

Pleat Design A: Tygar 3091L/PTFE Membrane/ Tygar 3091L/ Apertured Film (Dainet RB0707-31P)  
Pleat Design B: Tygar 3091L/PTFE Membrane/ Tygar 3091L/ Extruded Mesh (Nalle N01716-80PP)  
Pleat Design C: Tygar 3091L/PTFE Membrane/ Tygar 3091L/ Extruded Mesh (Nalle N01014-80PP)

Filter design A, which utilizes the apertured film, provides significantly more nesting capability than the extruded mesh materials. This additional nesting capability allows for a smaller individual pleat thickness, which provides for the greatest filter area in a cartridge.

The amount of filter media that can be packaged into a 10 inch cartridge with a centre core of outer diameter 1.73 inches and an outer cage of inner diameter of 2.646 inches can be determined in the following manner.

$$\text{Pleat Pack Length} = \text{Center Core Dia} \times 3.14 = (1.73'' \times 3.14) = 5.435''$$

$$\text{Number of Pleats per Cartridge} = \text{Pleat Pack Length} / \text{Individual Pleat Thickness} = (5.435'' / 0.026'') = 209 \text{ pleats}$$

$$\text{Effective Media Length} = 2 \times \text{Pleat Height} \times \text{Number of Pleats per Cartridge} = (2 \times 0.44'' \times 209) = 184''$$

$$\text{Total Effective Filter Media (10'' Cart)} = \text{Effective Media Width} \times \text{Effective Media Length} = 9.16'' \times 184'' = 1685 \text{ sqin.}$$

$$\text{Total Effective Filter Media in Sq Ft} = 1685 \text{ sqin} / 144 = 11.7 \text{ sqft}$$

The example above utilized the pleat design A which contains the apertured film. A similar calculation can be made utilizing the extruded nets of pleat design B and C.

The following table shows 10 inch cartridge areas for both apertured film and extruded mesh constructions.

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Filter Media Pleat Design	Individual Pleat Thickness	Total Pleats per Cartridge	10" Cartridge Area (sqft)	10" Cartridge Flow (gpm/psid)
A	0.026	209	11.7	4.1
B	0.050	109	6.1	2.1
C	0.038	142	8.0	2.8

Predicted product flow rates can then be determined in the following manner:

$$10'' \text{ Cartridge Flow} = 10'' \text{ Cartridge Area} \times \text{Filter Media Flow} = (11.7 \text{ sqft} \times 0.35 \text{ gpm/psid/sqft}) = 4.1 \text{ gpm/psid}$$

The predicted results demonstrate the improved flow performance benefits expected of a filter design using an **apertured film** when compared to the extruded mesh.

The predicted results demonstrate the substantially improved flow performance benefits expected of a filter design using an apertured film when compared to the extruded mesh design of the prior art.

The expression 'apertured element' in claims 1 and 11 has been replaced with 'apertured film' to conform to the description, e.g. at page 11, line 9.

For the Examiner's review, applicants have attached hereto copy of the NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT for the corresponding PCT application. As the Examiner will note, according to the European Examiner at POINT V, "The closest prior art is D1 (US Patent No. 5,552,048) which discloses an extruded mesh material for the downstream support layer 24 having grabs (See figure 3 and accompanying description). The subject matter of claim 1 is new over D1 by providing an **extruded apertured film** material having ribs. As demonstrated by the applicant with comparative experiments in his letter of 01.10.2004 an **extruded apertured film** material having ribs (sic ribs) gives a surprisingly greater ability to "nest" when folded than the extruded mesh material of D1. The advance each of the use of an extruded apertured film material having ribs and conjunctions with the use of an extruded mesh material having ribs as disclosed in the 1 is a higher number of pleats and thus a greater filtering surface for cartridge of the same dimension. Thus the subject matter of claim 1 and the dependent claims therefrom fulfill the requirements of Articles 33(2) and 33(3) PCT." Since there is no mention of "rips" in

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the application, it is apparent that the term *rips* is a misspelling and that the term "ribs" is intended by the INTERNATIONAL PRELIMINARY EXAMINATION REPORT. As the Examiner will note, the secondary applied reference, Pall (U.S. Patent No. 4,033,881), as applied in the present Office Action, is Reference D9 in the European Patent Office Notification of Transmittal of the International Preliminary Examination Report and appears to be considered as only background art by the European Examiner.

Applicants believe that the independent claims have been amended to clearly distinguish over both Miller et al. primary references, as applied both in European Patent Office and the U. S. Patent Office as well as the combinations proposed by the Examiner and an action acknowledging same is respectively requested.

As the Examiner knows, the Examiner carries the burden under Section 103 to establish a *prima facie* case of obviousness, *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), and must show that the references relied on teach or suggest all of the limitations of the claims. *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970). "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." *Carella v. Starlight Archery*, 804 F.2d 135, 231 U.S.P.Q. 375 (Fed. Cir. 1986). There must be some explicit teaching or suggestion in the art to motivate one of ordinary skill to combine the references in the manner suggested. See, *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 U.S.P.Q.2d 1294 (Fed. Cir. 1997). *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437, 45 U.S.P.Q.2d 1269 (Fed. Cir. 1997).

In this instance, the Examiner cannot establish a *prima facie* case of obviousness and has admitted that the primary reference relied upon does not teach or suggest all of the limitations of the amended independent claims. Since the secondary references cannot make up for the deficiencies of the primary applied reference, applicants submit that all remaining claims are allowable. Specifically, there is considerable difference between the extruded apertured film as required by the present independent claims and the extruded mesh/net with ribs as recited in the Examiner rejection of the independent claims. Accordingly, the independent claims,

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and each of the claims depending respectively therefrom, are not rendered obvious by the combination of Miller et al. ("743) in view of any of the applied secondary references. Therefore, withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested for the following reasons.

As is also known, CCPA and Federal Circuit case law provide the grounds for attacking an obviousness rejection for want of a *prima facie* showing. One such ground for attacking an obviousness rejection for want of a *prima facie* showing can be expressed as follows:

**"There Must Be a Basis in the Art for Combining or  
Modifying References."**

First, as the PTO recognizes in MPEP §2142:

The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. *If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...* The initial evaluation of *prima facie* obviousness thus relieves both the examiner and applicant from evaluating evidence beyond the prior art and the evidence in the specification as filed until the art has been shown to suggest the claimed invention.

As is known, the PTO may reject a claim as obvious (albeit novel) over a single prior art reference on the ground that it would have allegedly been obvious to a person of ordinary skill in the art to change what the reference shows to that which is claimed. The change, it may be asserted, is a matter of standard design technique. More often, however, the PTO will assert obviousness on the basis of the combination of two or more prior art references, *e.g.*, asserting that the primary reference teaches or shows most of that which is claimed and the secondary reference shows or suggests the element (s) or other teaching missing from the primary reference.

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In either the single reference or plural references situation, "the Examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made." MPEP §2142. The Examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed "as a whole." *Id.*

MPEP §2143.01 provides:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*; 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Federal Circuit has several times expressly addressed the issue of how to evaluate an alleged case of *prima facie* obviousness to determine whether it has been properly made. Thus, *In re Geiger, supra*, stated, in holding that the PTO "failed to establish a *prima facie* case of obviousness";

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

Of course, application of §103 presumes the existence of differences between the subject matter claimed and the teachings of any particular prior art reference. Otherwise a rejection under §102 would have sufficed. Thus, the Examiner must propose some modification of a particular reference or a combination thereof with another reference in order to arrive at the claimed invention. The Federal Circuit's assessment in *Geiger*, quoted above, is directed to the sufficiency of the teachings of a particular reference to justify a conclusion that any proposed modification or combination of references is what one of ordinary skill in the art would have found obvious to do at the time the invention was made. 815 F.2d at 688, 2 USPQ2d at 1278 (Fed. Cir. 1987).

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The CCPA earlier expressly held that there must be some logical reason apparent from the evidence of record that would justify a combination or modification of references. *In re Regel*, 188 USPQ 132 (CCPA 1975). In determining whether one of ordinary skill in the art would find it obvious to modify or combine references, the teachings of the references taken with the knowledge that a worker in the art already possesses constitute the scope and content of the prior art that is referred to in the *Graham* decision. *Graham v. John Deere*, 383 US 1, 148 USPQ 459 (1966). Thus, the question raised under §103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art.

Accordingly, even if all elements of a claim are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill would have been prompted to combine the teachings of the references to arrive at the claimed invention. *In re Regel, supra.*

Since the Examiner has not expressly pointed out how the prior art suggests or anticipates the benefits of modifying or combining references or when external factors, such as the changing state of the art, provide the motivation to one of ordinary skill in the art to make the modification or combination as claimed, but has only made the unsupported assertion that "It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's.", Applicants respectfully submit that the Examiner has not made a case for *prima facie* obviousness and an action acknowledging same is respectfully requested.

In the absence of such reason or suggestion, the *prima facie* case of obviousness failed. Some motivation to make a change is required in order to establish *prima facie* obviousness. When the prior art itself provides no apparent reason for one of ordinary skill in the art to make a modification or to combine references, an argument clearly, properly exists that the claimed subject matter would not have been obvious.

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The Federal Circuit has also repeatedly warned against using the applicant's disclosure as a blueprint to reconstruct the claimed invention out of isolated teachings in the prior art. See, e.g., *Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

More recently, the Federal Circuit reversed the Office's §103 rejection of claims in *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998), because the board had "reversibly erred in determining that one of [ordinary] skill in the art would have been motivated to combine these references in a manner that rendered the claim invention [to have been] obvious." *Id.* at 1357. The court noted that to "prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness." The court set forth three possible sources for such motivation, namely "the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *Id.* According to the court, "the Board merely invoked the high level of skill in the field of art," *id.*, without explaining what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. "If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance." *Id.*

In this particular rejection, the Examiner has not presented any such motivation or explained what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination and therefore has failed to present a prima facie case of obviousness and an action acknowledging same is respectfully requested.

Concerning the Examiner's assertion (personal knowledge/official notice/design choice) without providing acceptable reasoning that certain claims are rejected because "it would have been obvious...", applicants respectively submits that the Examiner's characterization of "It is considered to have been obvious to one of ordinary skill in the art to fabricate the downstream support layer from an extruded mesh/net with ribs because an extruded mesh/net is a conventional material of manufacture for the downstream support layer and the ribs provide the support layer

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with reinforcement useful in pressurized filtration systems, such as, Miller and Pall's." is clearly unsupported conclusions (personal knowledge/official notice/design choice) - not reasons on which to base rejections. In fact, applicants, who are skilled in the art, do not understand how the Examiner can possibly propose that the references cited could possibly disclose, suggest or teach the filter element, comprising, among other features, a second downstream support layer is in contact with the first downstream support layer and is fabricated so as to facilitate lateral fluid flow relative to the multi-layer downstream pleat support, wherein the second downstream support layer comprises an extruded apertured film having ribs, as defined in the instant claims.

It is applicants' position that the Examiner has not and cannot provide acceptable reasoning why the specific combination of features to form a filter element as required by the claims, would have been obvious to one of ordinary skill in the art.

One form of personal knowledge (other than the taking of official notice) is when the Examiner states that specific information that is needed to support the obviousness rejection is a matter of "design choice." That is, the Examiner is missing specific information and relies on general knowledge in the prior art that the Examiner assumes would teach the missing subject matter. The Examiner must provide sufficient reasoning to substantiate the claim of obvious design choice.

In the final rejection, the Examiner appears to make a new rejection based on "design choice," as the Examiner may know, a bald statement very similar to the Examiner's was addressed by the PTO Board of Patent Appeals and Interferences in In re Garrett, 33 BNA Pat. Trademark & Copyright J. 43 (November 13, 1986). The Board, in reversing an Examiner's similar, but legally untenable alleged rejection, held that the Examiner's assertion that the modification proposed was ..."an obvious matter of engineering design choice was an unsupported conclusion -- not a reason upon which to base the rejection". [See also In re Antonie, 559 F.2d 618, 195 U.S.P.Q. 6 (C.C.P.A. 1977), Carl Schenck, A.G. - v. Norton Corp., 713 F.2d 782, 218 U.S.P.Q. 698 (Fed. Cir. 1983) and Carman Industries v. Wahl, 774 F.2d 932, 220 U.S.P.Q. 481 (Fed. Cir. 1983)]. The Applicants find no disclosure, suggestion or teaching in the applied reference which would suggest to one skilled in



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the relevant art to combine the specific components mentioned above, as claimed in the present application.

In a later example relating to "design choice", in In re Chu, 66 F.3d 292, 36 U.S.P.Q.2d 1089 (Fed. Cir. 1995), the invention related to an apparatus used to control or filter emissions, such as sulphur oxides, oxides of nitrogen, and particulates (such as fly ash), from fossil fuel boilers. The Examiner was of the opinion that the prior art showed all the features of the invention with the exception of a baghouse filter having a catalyst located within the filter. The applicant Chu argued that the prior art references did not teach or suggest the positioning of the catalyst inside the bag retainer of the filter bags. Chu maintained that this feature was significant because the bag retainer provided support and prevented the filter bags from collapsing during pulse-jet cleaning. Chu provided technical evidence relating to, for example, the frailty of fabric filters during pulse-jet cleaning, and the violent "snapping" action during pulse-jet cleaning.

On appeal, the Board concluded that situating the catalyst within the bag retainer was a matter of "design choice" and affirmed the rejection. The Federal Circuit, however, reversed the rejection. The court emphasized that Chu's technical evidence militated against a conclusion that placement of the catalyst was merely a design choice. **Since the Board provided no specific reasoning to support the assertion of design choice, the Federal Circuit reversed the rejection. (Emphasis added) Thus, the Chu decision instructs that the Examiner must provide reasoning why a specific feature is a matter of design choice, and therefore obvious. (Emphasis added)**

In a more recent case, In re Sang-Su Lee, 61 U.S.P.Q.2d 1430, the Federal Circuit spoke definitively concerning the requirement for "judicial review of a decision of the Board of Patent Appeals and Interferences denying an application for a patent by stating that any rejection must be founded on the obligation of the agency to make the necessary findings and to provide an administrative record showing the evidence on which the findings are based, accompanied by the agency's reasoning in reaching its conclusions." The Federal Circuit stated that "as applied to the determination of patentability vel non when the issue is obviousness, it is fundamental that the rejection of a patent application must be based on evidence

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comprehended by the language of the statute addressing obviousness." The Federal Circuit went on to say that "the patent examination process centers on prior art and the analysis thereof; when patentability turns on the question of obviousness, the search for an analysis of prior art includes evidence relevant to the findings of whether there is a teaching, motivation or suggestion to select and combine the references relied on as evidence of obviousness." The Federal Circuit further stated that "in an obviousness determination, the factual question of motivation to combine prior art is material to patentability, and cannot be resolved on subjective belief and unknown authority." (Emphasis added) "In an obvious determination under patent law, it is improper, in determining whether a person of ordinary skill would have been led to combine references, simply to use that which the inventor taught against its teacher; thus, the Board of Patent Appeals and Interferences must not only assure that the requisite findings are made, based on evidence of the record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion."

As further stated in the opinion, "In finding the relevant facts, in assessing the significance of the prior art, and in making the ultimate determination of the issue of obviousness, the examiner and the Board of Patent Appeals and Interferences are presumed to act from the viewpoint of a person having ordinary skill in the art to which the subject matter pertain; thus, when they rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record and the failure to do so is not consistent with either effective administrative procedure or effective judicial review.... "In the context of an obvious determination, the Board of Patent Appeals and Interferences cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies...." "Sound administrative procedure requires that an agency apply the law in accordance with statute and precedent; the agency tribunal must make findings of relevant facts, and present its reasoning in sufficient detail that the court may conduct meaningful review of the agency's action."

Specifically, the Federal Circuit stated as follows "...The foundation of the principal of judicial deference to the rulings of agency tribunals is that the tribunal has specialized knowledge and expertise, such that when reasoned findings

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are made, a reviewing court may confidently defer to the agency's application of its knowledge in its area of expertise. Reasoned findings are critical to the performance of agency functions and judicial reliance on agency competence." (Citations omitted) "The 'common knowledge and common sense' on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfil the agency's obligation. This court explained in Zurko, 258 F.3d at 1385, 59 USPQ2d at 1697, that 'deficiencies of the cited references cannot be remedied by the Board's general conclusion about what is 'basic knowledge' or 'common sense.' The Board's finding must extend to all material facts and must be documented on the record, least the 'haze of so-called expertise' acquire insulation from accountability. 'Common knowledge and common sense,' even if assumed to be derived from the agency's expertise, do not substitute for authority when the law requires authority. (Citations omitted)

Applicants respectfully submit that, like the Board in In re Lee, by essentially saying that to combine the elements of the references, without a detailed explanation as to why or how, was 'common knowledge and common sense' and that such is not a substitute for authority when the law requires authority. Consequently, applicants respectfully request that the Examiner provide the authority in the form of the above requested affidavit or additional reference/detailed explanation which provide the detailed explanation as to how the apertured film missing element of the applied references was provided, as required by the amended claims, and an action acknowledging same is respectfully requested.

It is applicants' position that the Examiner has not and cannot provide acceptable reasoning why the specific combination, as now required by the amended claims, are obvious without some documented evidence, what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination to support the asserted "obviousness" and an action acknowledging same as respectfully requested.

As is known, it is an incumbent upon the Examiner to present all the elements of a prima facie case of obviousness. Thus, the Examiner must explain why the prior art appeared to show the claimed subject matter and not simply the general

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aspects of the invention. Further, the Federal Circuit has added that when more than one reference or source of prior art is required in establishing the obviousness rejection "it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claim substitution or other modification." [See, In re: Lahu, 747 F.2d 703, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984)] Thus, it is not enough that the Examiner present references that contain the assorted features of the invention. The Examiner must also show why it would appear that the references would have been combined. [See also, In re: Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)] This the Examiner has not done and cannot do as it is believed that there is no disclosure, suggestion or teaching in either of the applied references to combine the applied reference to produce the now claimed filter element and an action acknowledging same is respectfully requested.

In view of the above action by the European Examiner based upon what is arguably a more relevant reference than the primary reference used in the present Office Action and the data and adjudicated cases above, applicants respectfully submit that all claims, claims 1-17 and 19-22, are now in condition for allowance and an action acknowledging same is respectfully requested.

Applicants respectfully request that this amendment after final rejection be entered for the purposes of appeal and that it is believed that the present response places the case in condition for allowance and/or better form for appeal. As the Examiner knows, the proposed amendment should be given sufficient consideration to determine whether the claims Eric condition for allowance and/or with the issues on appeal are simplified and the Examiner should not refuse to enter the amendment arbitrarily.

If after reviewing this amendment, should the Examiner have questions, require additional information or believe that a telephonic or personal interview would resolve any remaining matters, the undersigned may be contacted at the telephone number provided below.

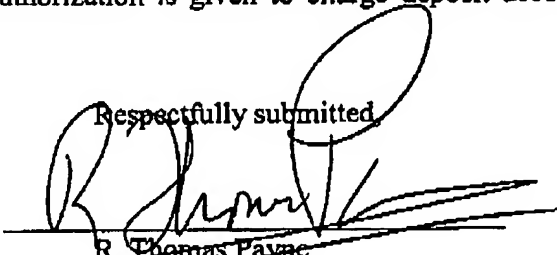
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No fees are believed due for filing this response. However, if it is determined that a fee is required, authorization is given to charge deposit account number 033879.

Respectfully submitted,

Date: June 1, 2005



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